Operating Guide

SWM4000 Series

SMART SPECTRUM®
WIRELESS MICROPHONES

SABINE®
WIRELESS SYSTEMS

the sound of innovation™

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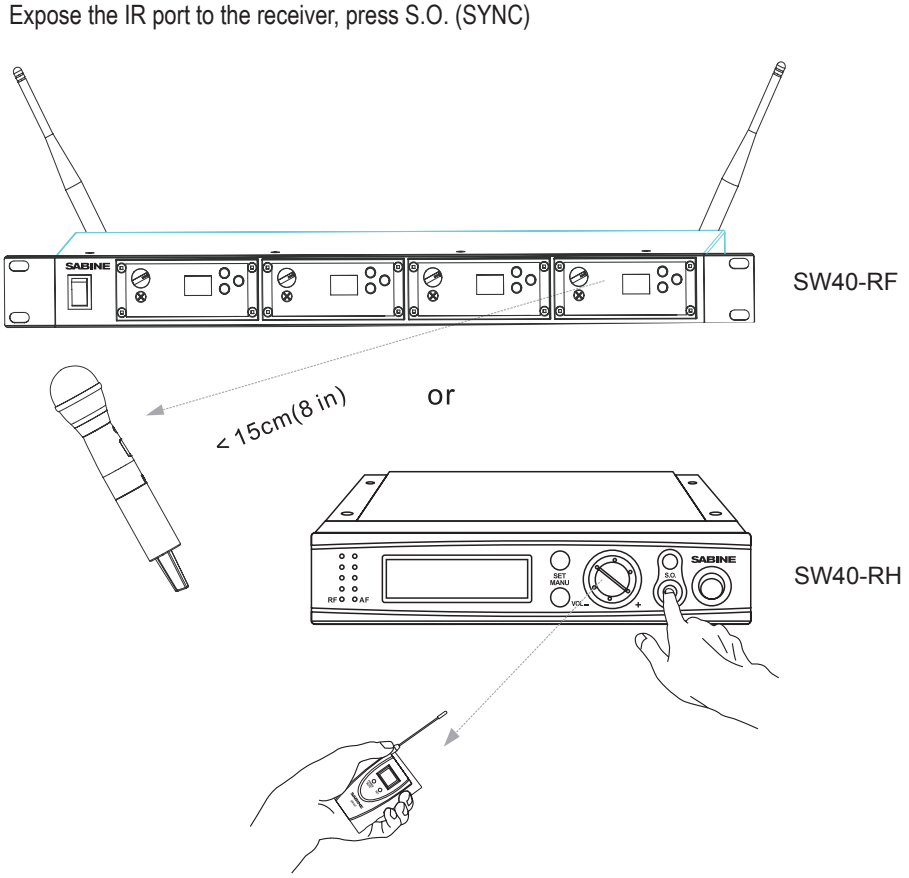
Quick Start Guide for SWM4000 WIRELESS SYSTEMS

Setting up the SWM4000 Receivers.

1. Plug the PSU power supply into the wall socket and receiver and power on the unit.
2. Push the MENU button until the words “Auto Select” appear in the LCD (SW40-RH). Or, the word “SCAN” for the SW40-RF
3. Push the SET button. The SW40-RH or SW40-RF will set itself to a clear channel and display the channel on the receiver LCD.
4. Turn on a transmitter (leave the other transmitters turned off). Aim the transmitter’s IR sensor about 8 inches from the receiver’s IR scanner and press the receiver’s S.O. (SYNC) button for several seconds while the receiver programs the transmitter. When the group and channel numbers on the transmitter matches the receiver, the system is ready to operate. The RF LED should be fully lit when you are standing close.



5. Speak, sing or play into the transmitter to adjust the volume control so that the A.F. LEDs generally light under normal performance conditions. The volume should be adjusted so that the top A.F. LED only lights momentarily with the loudest inputs. You will hear a harsh clipping sound if the top LED stays lit under normal levels.
6. Adjusting the squelch. The squelch controls the maximum distance between the transmitter and receiver. It is set to maximum range at the factory and should be kept there in most cases.

For Multiple Systems

- Repeat steps 1 – 6 if you wish to add more systems. **IMPORTANT: Make sure to keep the transmitters that have been set up turned on so that new receivers will know those channels are busy.**
- See Appendix A for manually selecting the frequencies of your system.
- **Be sure that only one transmitter’s IR port is exposed when setting up a system.**

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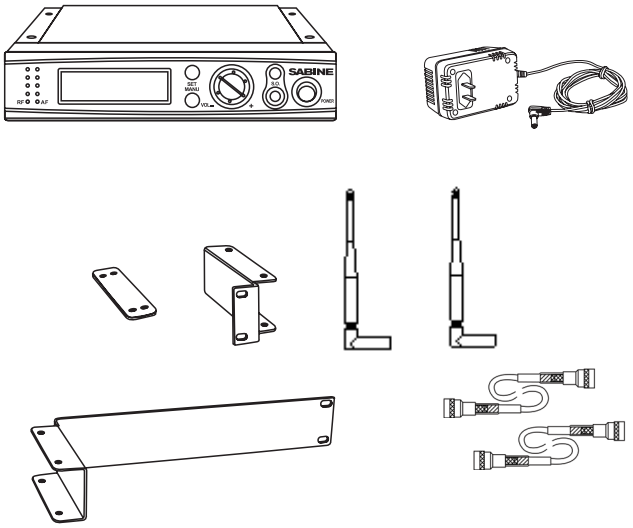
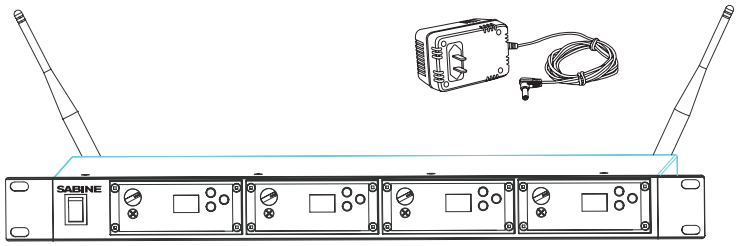
Components



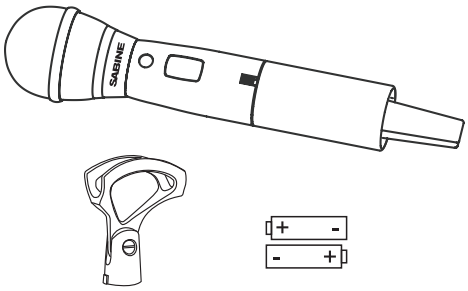
SW40-RH Half-Rack receivers include:

- Power Supply
- Dipole antennas (1 pair)
- Rack Mount kit:
  - Short rack ear
  - Long rack ear
  - Link bar to mount a second SW40-RH receiver
  - 8 rack screws
  - 4 rack mount screws
- Extension cables and connectors for front-mounting antennas
- 1/4 inch patch cable (not shown)
- operating guide



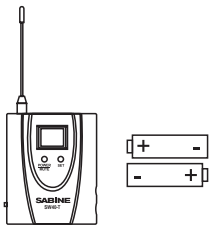
SW40-R modular receivers include:

- Module Frame with 1, 2, 3 or 4 modules
- Dipole antennas (1 pair)
- Power Supply
- Operating guide



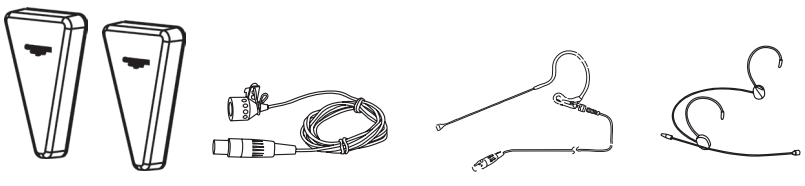
SW40-H Handheld transmitters include:

- Microphone and transmitter
- Mic holder
- AA batteries (1 pair)



SW40-T Beltpack transmitters include:

- Beltpack transmitter
- AA batteries (1 pair)



SWASS-EXT 3 | SWT31L-TA4 | SWT74W-OSB-TA4 | SWT74W-ODB-TA4

Optional:

- Extention antennas.
- lavalier microphone
- single-ear microphone
- double-ear microphone

See www.Sabine.com for details.

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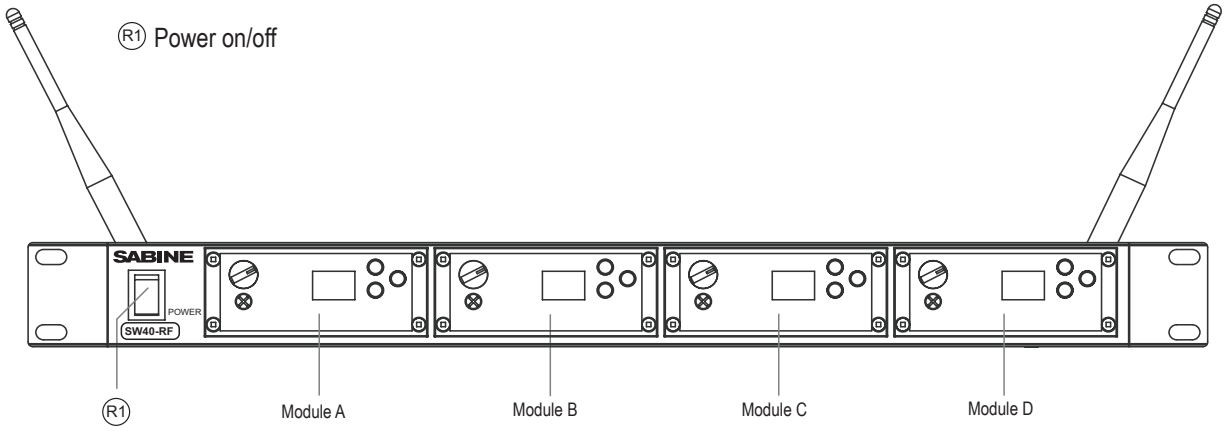
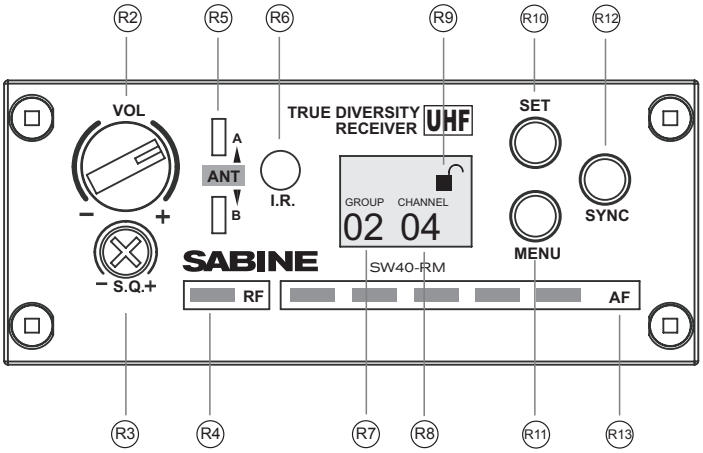
SW40-RF-Module Receiver Details

Front Panel



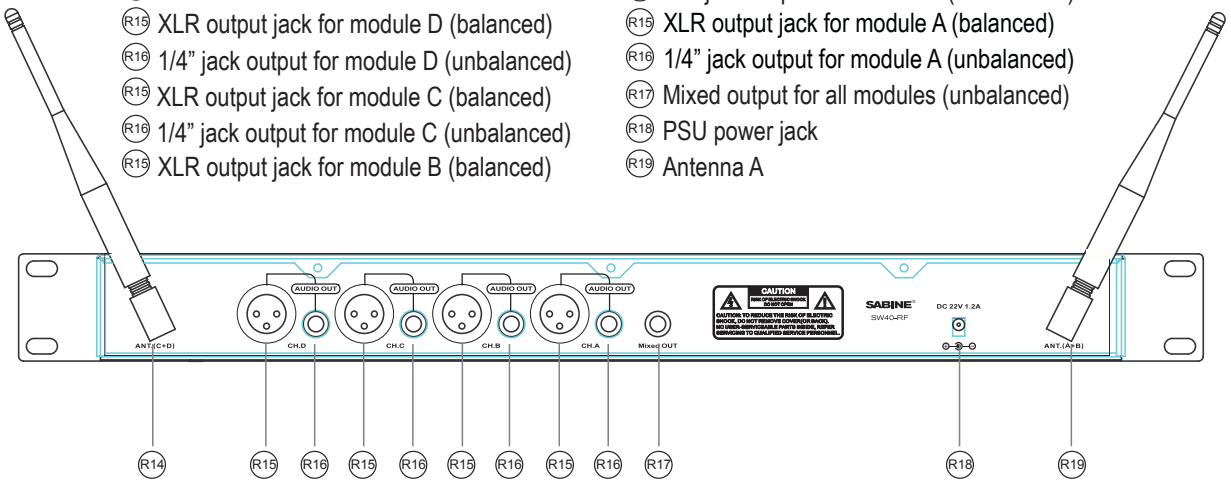
Module Front

- R2 Volume (Gain)
- R3 Squelch
- R4 RF signal
- R5 Active antenna
- R6 I.R. sensor
- R7 Group selection
- R8 Channel number
- R9 Lock all controls
- R10 Set
- R11 Menu
- R12 Sync
- R13 Audio signal



Back Panel

- R14 Antenna B
- R15 XLR output jack for module D (balanced)
- R16 1/4” jack output for module D (unbalanced)
- R15 XLR output jack for module C (balanced)
- R16 1/4” jack output for module C (unbalanced)
- R15 XLR output jack for module B (balanced)
- R16 1/4” jack output for module B (unbalanced)
- R15 XLR output jack for module A (balanced)
- R16 1/4” jack output for module A (unbalanced)
- R17 Mixed output for all modules (unbalanced)
- R18 PSU power jack
- R19 Antenna A



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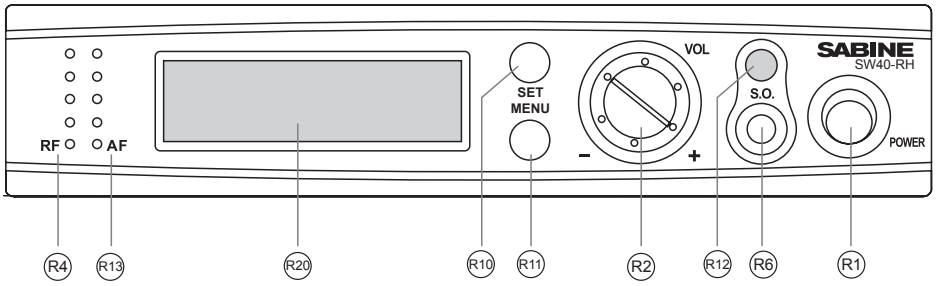
SW40-RH 1/2-Rack Receiver Details

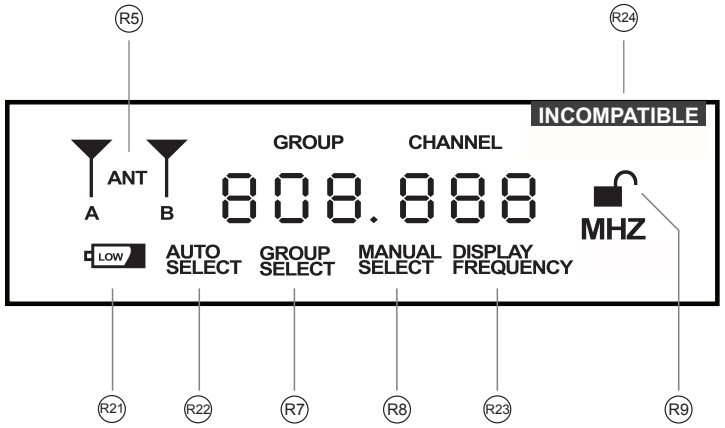
Front Panel

(R1) Power On/Off switch - Push up to turn on, push down to turn off.
(R2) Volume control. The volume control dial should generally be left in the clockwise position. Turning the dial counter-clockwise decreases receiver output level.
(R4) RF LED - Indicates strength of incoming RF signal.
(R6) Smart option - Press to initiate IR connection between receiver and transmitter.
(R10) Set switch - Press to select the currently displayed menu option.
(R11) Menu switch - Press to scroll through menu options.
(R12) Infrared (IR) port - Broadcasts IR signal to transmitter to synchronize frequencies..
(R13) Audio LED - Indicates strength of incoming audio signal.
(R20) LCD display



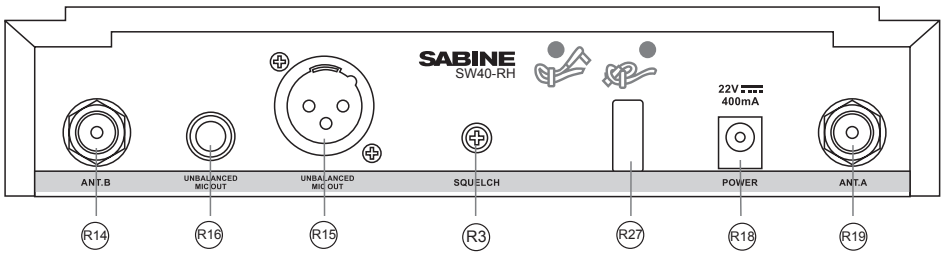
LCD display

(R5) Antenna status
(R7) Group selection
(R8) Manual channel selection
(R9) Lock/unlock receiver settings
(R21) Transmitter Battery status
(R22) Automatic frequency selection
(R23) Display frequency
(R24) Incompatable frequency



Back Panel

(R3) Squelch
(R14) Antenna jack B
(R15) XLR output jack
(R16) 1/4 jack output jack
(R18) AC adapter jack
(R19) Antenna jack A
(R27) Adapter cord tie-off



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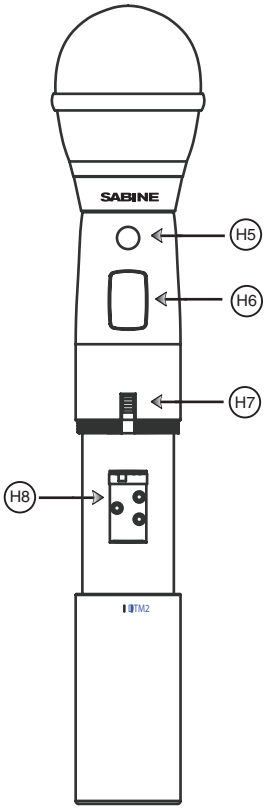
Handheld Transmitter

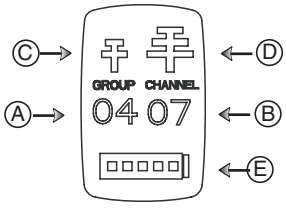


Controls

To Open: Unscrew lower portion of microphone. Pull down as you continue to turn the housing.

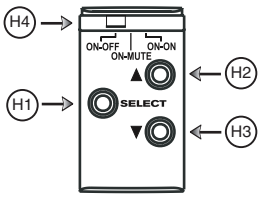
To Close: Turn the housing and push up until it meets the threads, then screw on.

- (H1) Select Button
- (H2) Up Button
- (H3) Down Button
- (H4) Programmable Control of External Switch
- (H5) Infrared Port
- (H6) Transmitter LCD Screen
- (H7) External Switch
- (H8) Transmitter controls and battery compartments



Transmitter LCD screen

- (A) Group Number
- (B) Channel Number
- (C) Antenna Indicator - Low output
- (D) Antenna Indicator - High output
- (E) Battery life Indicator



Transmitter Controls

Programming the Handheld Transmitter

(A) ***Group/Channel*:** Press the Select button to enter Edit Mode, and repeat until the GROUP indicator flashes. In this mode, the Up/Down buttons will adjust Group selection. Choose your group, then press the select button until the CHANNEL indicator flashes. In this mode, the Up/Down buttons will adjust Transmission Channel.

(C) (D) ***RF Output:*** Press the Select button to enter Edit Mode, and repeat until the antenna indicators flashes. The small antenna symbol indicates low output (useful if there are many transmitters clustered together) and the large antenna symbol indicates high output (good for larger spaces). Press the up or down buttons to add or subtract the high-level output symbol.

(H4) ***Internal Control of External Switch:*** The recessed transmitter controls include a 3-position switch, which in turn determines how the transmitter's external two-position switch behaves. From left-to-right, the 3 positions of the internal switch correspond to the following external switch operations. NOTE: The antenna symbol blinks when the transmitter is not muted.

- ON-OFF: In the off position the transmitter is turned off. When you turn it on there is a short boot-up period before the mic turns on.
- ON-MUTE: In the off position the audio is muted, but the transmitter is still on. Use this when you need the audio to come on instantly when turning on the microphone.
- ON-ON: In both switch positions the mic is on. In essence you are disabling the external switch, and leaving the mic on at all times. This is useful if you are working with talent that might accidentally turn off the mic.

(E) ***Battery Life Indicator:*** The battery symbol shows the battery level. Typical battery life is 8 hours.

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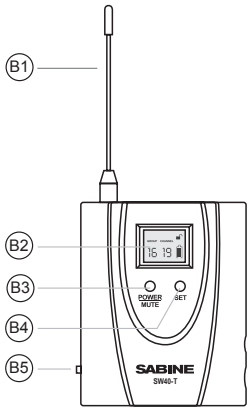
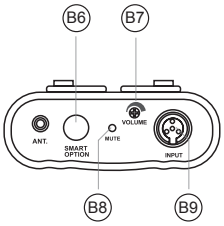
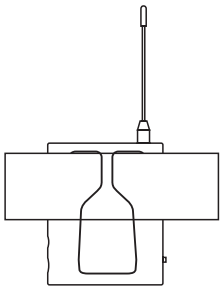
Beltpack Transmitter





Controls

(B1) Antenna (replaceable)
(B2) LCD screen
(B3) On-off/mute switch
Press and hold to turn on or off. Press and release to mute or un-mute.
(B4) Set switch
(B5) Battery cover
(B6) IR port - Receives infrared beam to synchronize frequencies.
When using multiple systems, only one transmitter IR port should be exposed at a time.
(B7) Gain adjustment switch
(B8) Mute indicator - Red: mute on
(B9) TA4-F microphone input jack

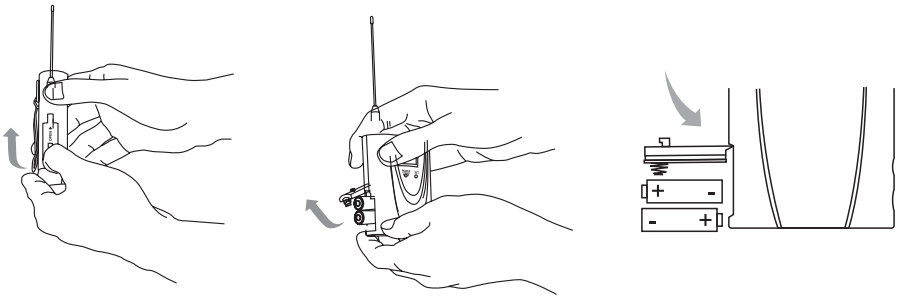


Wearing the Beltpack Transmitter

- Clip the transmitter to a belt until the belt is pressed against the base of the clip.

Changing Batteries

- Expected life for an Alkaline battery is approximately 8 hours.
- Change batteries when the battery bar in LCD display is empty, as shown below:



Programming the Beltpack Transmitter

Manually Select a Group and/or Channel set

1. With the power on, press and hold the **set** button until the GROUP and CHANNEL displays begin to alternate.
2. To change the group setting, release the **set** button while GROUP is flashing. While GROUP is flashing, pressing **set** increases the group setting by one.
3. Press **power** button to switch between GROUP and CHANNEL settings.

Remember to press **power** and **set** button to confirm when the setting is completed.

Lock or Unlock Transmitter Settings power + set

Press the **power** and **set** buttons simultaneously to lock or unlock the transmitter settings. When locked, the current settings cannot be changed manually.

Battery Status

Indicates charge remaining in transmitter batteries.

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Operating Instructions

Congratulations on purchasing your Sabine SWM4000 Series Wireless Microphone System. This system is specially designed to provide you with excellent audio quality, ease of use, and reliability.

Frequency Bands The SW4000 series is available in several frequency bands to accommodate various local governmental regulations throughout the world. The frequency band of your system is represented by the numbers appended to the part number. For example, the SW40-RM3-U-915 operates in the 915 MHz band while the SW40-RM3-E-860 operates in the 860 MHz band.

The band recommended for the US and Canada, along with Central and South American is the 915 Mhz band. This band is immune to interference from analog and digital TV, mobile or smart phones, and most WIFI devices. It operates with up to 8 concurrent users in the same location.

Contact your local distributor to determine the best band for your location outside of the Americas. Or, visit www.sabine.com for the most current information.

Installing the SW4000 system in your sound system.

Antennas. Antennas pick up the signal from the transmitters and transfers it to the receiver where it converted to an audio signal. A pair of SWAANT dipole antennas are included with your system. Antennas are like the "eyes" of the system. You will hear dropouts if the antennas cannot "see" the transmitter. Antennas cannot "see" through steel or concrete. If your antennas are mounted on the back of the receiver, rotate the receiver body around so that the antennas are in the line of sight of the transmitter.

A receiver mounted in a rack must use the back-to-front cables and have the antennas mounted in the line of sight of the transmitter on the front of the rack. Also, dipole antennas should be orientated to the 11:00 and 2:00 positions for the best reception.

If the antennas are blocked or shadowed, you should replace the SWAANT antennas with Sabine's SWASS-EXT-3 external antennas. **Make sure you specify the frequency band of your system when you order.**

Audio Connections Your receiver has both a balanced XLR and unbalanced ¼-inch audio jacks on the back panel to connect the receiver to your mixer or powered speaker. Use the balanced jack whenever possible.

Channel Selection Follow the steps on the next page to quickly find interference-free channels.

Note: transmitting devices such as cellular phones and two-way radios may interfere with wireless audio transmissions. Keep your transmitters and receivers away from these and other potential sources of interference.

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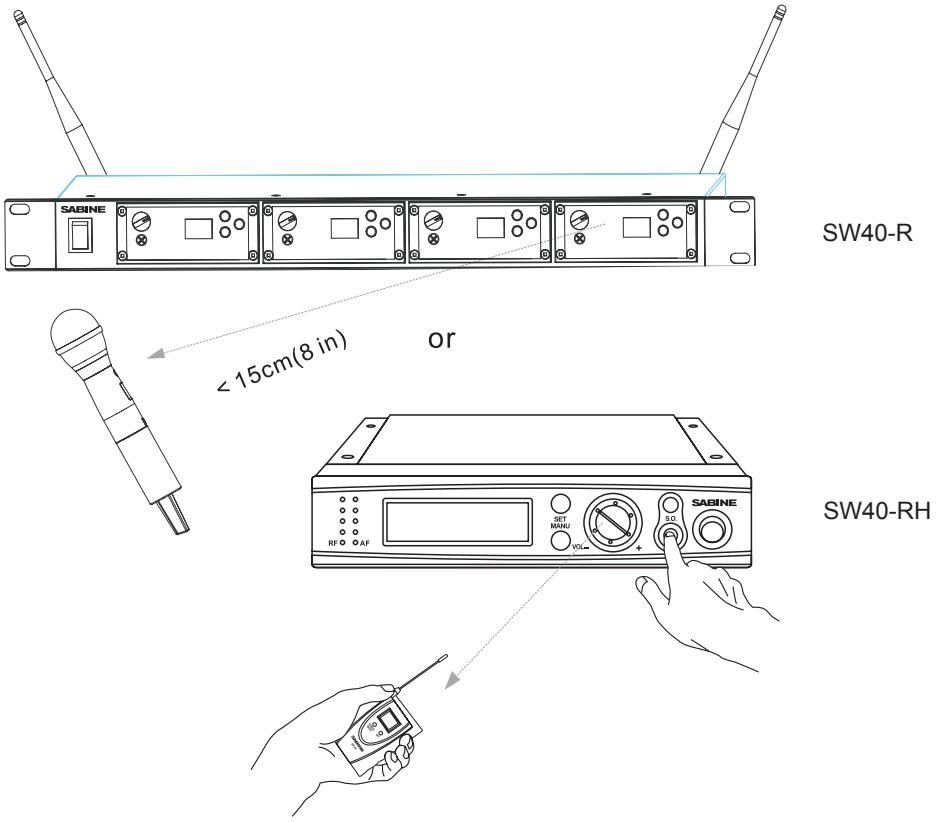
Setting up your Wireless Systems

1. Plug the PSU power supply into the wall socket and receiver.
2. (SW40-RH) Push the MENU button until the words Auto Select appear in the LCD. (SW40-RF) Push the MENU button until the words scan appear in the LCD.
3. Push the SET button. The SW40-RH or SW-40-RF will set itself to a clear channel and display the channel on the receiver LCD.
4. Turn on a transmitter (leave the other transmitters turned off). Aim the transmitter's IR sensor about 8 inches from the receiver's IR scanner and press the receiver's S.O. (SYNC) button for several seconds while the receiver programs the transmitter. When the group and channel numbers on the transmitter matches the receiver, the system is ready to operate. When you are standing close, the RF LED ladder on the SW40-RH should be fully lit or, on the SW40-RF, the RF LED bar will be lit.

Expose the IR port to the receiver (within 8 inches), press S.O. (SYNC)



5. Speak, sing or play into the transmitter to adjust the volume control so that the A.F. LEDs generally light under normal performance conditions. The volume should be adjusted so that the top A.F. LED only lights momentarily with the loudest inputs. You will hear a harsh clipping sound if the top LED stays lit under normal levels.
6. Adjusting the squelch. The squelch controls the maximum distance between the transmitter and receiver. It is set to maximum range at the factory and should be kept there in most cases.

For Multiple Systems

• Repeat steps 1 – 6 if you wish to add more systems. **IMPORTANT: Make sure to keep the transmitters that have been set up turned on so that new receivers will know those channel are busy.**

• See Appendix A (pg.10) for manually selecting the frequencies of your system.

• **Be sure that only one transmitter's IR port is exposed when setting up a system.**

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Appendix A
Manual Programming

Receiver Programming

Ⓡ7 ***Group Selection*** ① **2x** menu ② set ③ S.O.

Allows manual selection of a frequency group. Pressing SET increases the group number by one. When the correct frequency is displayed press S.O. (SYNC). For best results when operating multiple systems, set all systems to a single group; then set each system to a unique channel within that group.

Ⓡ8 ***Manual Channel Selection*** ① **3x** menu ② set ③ S.O.

Allows manual selection of a frequency channel. Pressing SET increases the channel number by one. When the correct frequency is displayed press S.O. (SYNC).

Ⓡ23 ***Display Frequency **** ① **4x** menu ② set

Display the current frequency in MHz. Press again to display group and channel.

Ⓡ9 ***Lock or Unlock Receiver Settings*** set + menu

Hold down the SET key and press MENU to lock or unlock the receiver. Locking prevent the current receiver settings from changing.

Ⓡ5 ***Antenna Status***

Indicates RF activity. Only one antenna is active at any one time.

Ⓡ21 ***Transmitter Battery Status***

Indicates a low transmitter battery charge.

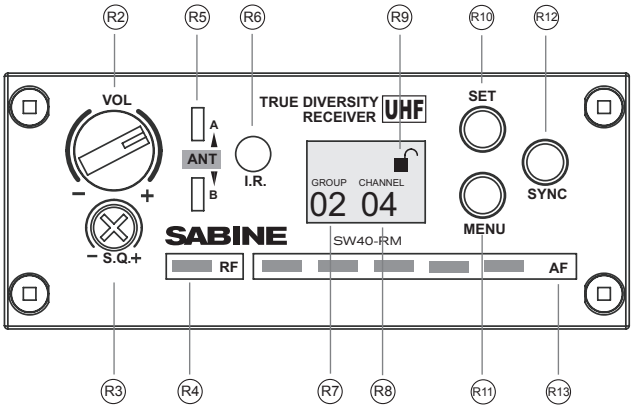
Ⓡ26 ***INCOMPATIBLE Frequency Warning***

The INCOMPATIBLE warning indicates that the receiver and transmitter are set to incompatible frequency bands. Contact your retailer for assistance.

Any option displayed on screen will generally time out after five seconds

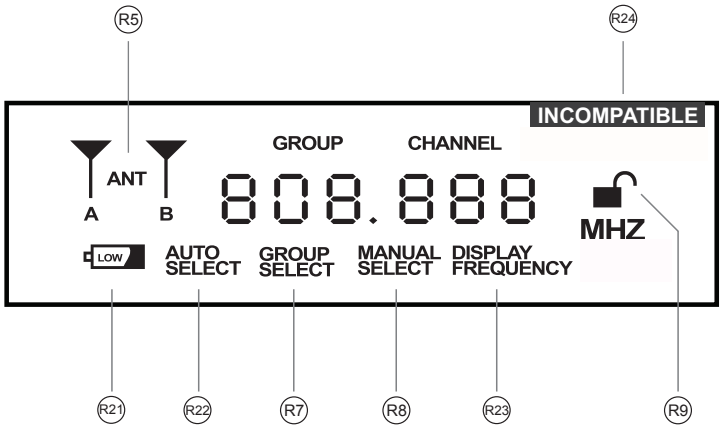
SW40-RF Module Front

Ⓡ2 Volume (Gain)
Ⓡ3 Squelch
Ⓡ4 RF signal
Ⓡ5 Active antenna
Ⓡ6 I.R. sensor
Ⓡ7 Group selection
Ⓡ8 Channel number
Ⓡ9 Lock all controls
Ⓡ10 Set
Ⓡ11 Menu
Ⓡ12 Sync
Ⓡ13 Audio signal



SW40-RH LCD display

Ⓡ5 Antenna status
Ⓡ7 Group selection
Ⓡ8 Manual channel selection
Ⓡ9 Lock/unlock receiver settings
Ⓡ21 Transmitter Battery status
Ⓡ22 Automatic frequency selection
Ⓡ23 Display frequency
Ⓡ24 Incompatable frequency



* Available only on the SW40-RH

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Appendix B
Frequencies and Groups

FREQUENCY BAND SELECTION

Most countries closely regulate radio frequency devices to limit RF (radio frequency) interference. Many countries are in the process of changing their regulations in order to accomodate requirements for DTV braodcasts and smart phones. SWM4000 systems are available in several frequency ranges. Contact your local retailer to determine the bands that are suitable in your area. Sabine is making new frequency bands available as the regulations evolve. The most current information can be found at www.Sabine.com.

The following bands are available at the time this manual was printed:

902-928 Mhz - For the Americas, Australia and New Zealand (These frequencies are expected to remain license free and relatively free of interference for the foreseable future.)
790-819 MHz - For China
790-865 MHz - for The Pacific Rim and some European countries.
850-865 MHz - Some European countries.

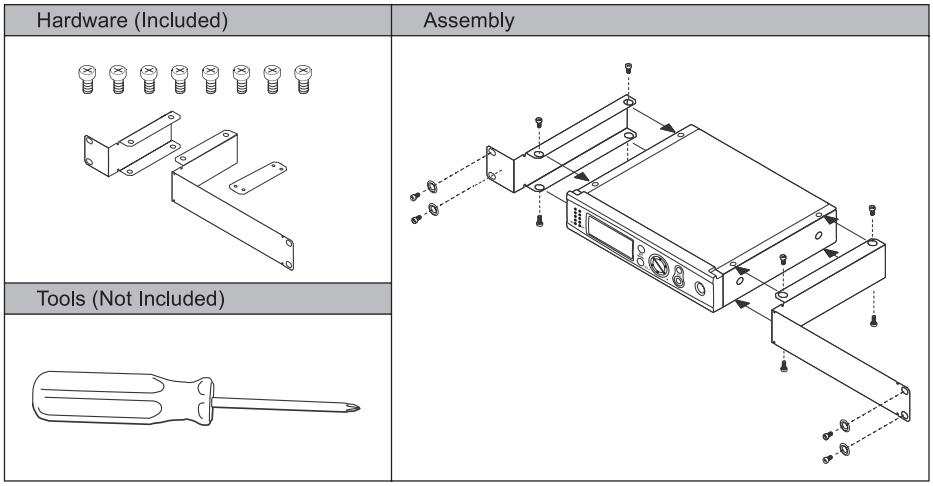
SWM4000 systems typically provide predefined frequency groups and channels. All microphones in a system should be set individual channels within a sinlge group to reduce the chance of interference. DO NOT SET TWO TRANSMITTERS TO THE SAME GROUP AND CHANNEL.

Up to 8 individual transmitter/receiver systems may be used simultaniously in the same venue. It is possible to operate up to 20 systems simultaneously.

Appendix C
Rack-Mounting SW40-RH Receivers

Rack-Mounting Receivers

The supplied mounting hardware allows an receiver to be mounted in any standard 19″ audio equipment rack.



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Appendix D

Tips for Improving System Performance

- Maintain a line of sight between transmitter and antenna.
- Avoid placing the receiver near metal surfaces or any digital equipment (CD players, computers, etc.)
- Secure the AC adapter cable to the receiver using the cable retainer loop
- If rack-mounting the receiver, front-mount the antennas by using the extension cables and connectors.

Troubleshooting

Issue	Indicator Status	Solution
No sound or faint sound	Transmitter power light off	• Turn transmitter on • Make sure the +/- indicators on battery match the transmitter terminals • Insert a fresh battery
	Receiver LCD off	• Make sure AC adapter is securely plugged into electrical outlet and into • DC input connector on rear panel of receiver • Make sure AC electrical outlet works and is supplying proper voltage
	Receiver display indicates antenna activity	• Press mute switch on transmitter • Turn up receiver volume control • Increase transmitter gain switch setting • Check cable connection between receiver and amplifier or mixer
	Receiver display indicates no antenna activity; transmitter and receiver power lights glowing	• Extend receiver antennas vertically • Move receiver away from metal objects • Check for line of sight between transmitter and receiver • Move transmitter closer to receiver • Check that receiver and transmitter are using the same frequency
	Transmitter power light glowing or flashing red	• Replace transmitter batteries
	INCOMPATIBLE warning on transmitter	• The **INCOMPATIBLE** warning indicates that the receiver and transmitter are set to incompatible frequency bands. Contact your retailer for assistance.
Distortion or unwanted noise bursts	Receiver display indicates antenna activity	• Remove nearby sources of RF interference (CD players, computers, digital effects, in-ear monitor systems, etc.) • Change receiver and transmitter to a different frequency • Reduce transmitter gain • Replace transmitter battery • If using multiple systems, increase the frequency spread between systems
Distortion level increases gradually	Transmitter power light glowing or flashing red	• Replace transmitter batteries
Sound level different from cabled guitar or microphone, or when using different guitars		• Adjust transmitter gain and receiver volume as necessary
FULL warning displays on receiver		• The **FULL** warning indicates that all available channels in the currently selected group are in use. When this occurs, reprogram all systems to an alternate group.
Cannot turn transmitter off	Transmitter light flashing red	• Replace transmitter batteries

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Appendix E
Specifications

SW40 Receiver

Operating Range Under Typical Conditions
- 100m (300 ft)
  - Note: actual range depends on RF signal absorption, reflection, and interference

Audio Frequency Response (+/- 2 dB)
- Maximum: 20 kHz
- Minimum: 50 Hz
- (Overall system frequency depends on microphone element.)

Total Harmonic Distortion (ref. +/- 30 kHz deviation, 400Hz tone)
- 0.5%, typical

Dynamic Range
- >100 dB A-weighted

Operating Temperature Range
- -18ºC (0~F) to +57ºC (+135ºF)
  - Note: battery characteristics may limit this range

Dimensions
- 205 mmH x 160mmW x 39 mmD

Weight
- 960 g

Housing
- Galvanized steel

Audio Output Level(ref.+/- 30kHz deviation with 400Hz tone)
- XLR connector (into 600 Q load): -30dBV
- 1/4 inch connector (into 3000 Q load):-9dBV

Output Impedance
- XLR connector: 200
- 1/4 inch connector: 1k

XLR output
- Impedance balanced
- Pin 1: Ground (cable shield)
- Pin 2: Audio
- Pin 3: No Audio

Sensitivity
- -105 dBm for 12 dB SINAD, typical
- Image Rejection
  - >70 dB, typical

Power Requirements
- 22V dc at 400mA, supplied by external power supply

SW40-H Handheld Transmitter

RF Transmitter Output
- 30 mW maximum (dependent on applicable country regulations)

Dimensions (including EM-I1S cartridge)
- 270 mm x 52 mm dia.

Weight
- 250 g without batteries

Housing
- Molded ABS handle and battery cup

Power Requirements
- 2 “AA” size alkaline or rechargeable batteries

Battery Life
- >8 hours (alkaline)

SW40-T Beltpack Transmitter

Gain Adjustment Range
- 30 dB

Input Impedance
- 500 K

RF Transmitter Output
- 30 mW maximum (dependent on applicable country regulations)

Dimensions
- 85 mm H x 70 mm W x 20 min D

Weight
- 97 g without batteries

Housing
- Molded ABS case

Power Requirements
- 2”AA’ size alkaline or rechargeable batteries

Battery Life
- >8 hours (alkaline)

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NOTES:

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